

Santoprene™ 241-55

Thermoplastic Vulcanizate

Product Description

A soft, colorable, specialty thermoplastic vulcanizate (TPV) in the thermoplastic elastomer (TPE) family. It is designed for use in plumbing applications requiring potable water contact and also for food processing equipment. This grade of Santoprene TPV is shear-dependent and can be processed on conventional thermoplastics equipment for injection molding or extrusion. It is polyolefin based and recyclable within the manufacturing stream.

Key Features

- Certified by NSF to NSF/ANSI Standard 51: Food Equipment Materials - Plastics, materials and components used in food equipment.
- Certified by NSF to NSF/ANSI Standard 61: Drinking Water System Components - Health Effects.
- UL listed: file #QMFZ2.E80017, Plastics - Component; file #QMFZ8.E80017, Plastics Certified For Canada - Component.
- Recommended for applications requiring excellent flex fatigue resistance.

General

Availability ¹	▪ Africa & Middle East ▪ Asia Pacific	▪ Europe ▪ Latin America	▪ North America
Applications	▪ Plumbing - Potable Water Seals and Gaskets ▪ Tubing		
Uses	▪ Plumbing Parts		
Agency Ratings	▪ NSF STD-51 ▪ NSF STD-61	▪ UL QMFZ2 ▪ UL QMFZ8	
RoHS Compliance	▪ RoHS Compliant		
UL File Number	▪ E80017		
Color	▪ Natural Color		
Form(s)	▪ Pellets		
Processing Method	▪ Coextrusion ▪ Extrusion	▪ Injection Molding ▪ Multi Injection Molding	▪ Profile Extrusion ▪ Sheet Extrusion
Revision Date	▪ 06/20/2014		

Physical

	Typical Value (English)	Typical Value (SI)	Test Based On
Density / Specific Gravity	0.960	0.960	ASTM D792
Density	0.960 g/cm ³	0.960 g/cm ³	ISO 1183

Hardness

	Typical Value (English)	Typical Value (SI)	Test Based On
Shore Hardness			ISO 868
Shore A, 15 sec, 73°F (23°C)	59	59	

Elastomers

	Typical Value (English)	Typical Value (SI)	Test Based On
Tensile Stress at 100% - Across Flow (73°F (23°C))	247 psi	1.70 MPa	ASTM D412
Tensile Stress at 100% - Across Flow (73°F (23°C))	247 psi	1.70 MPa	ISO 37
Tensile Strength at Break - Across Flow (73°F (23°C))	653 psi	4.50 MPa	ASTM D412
Tensile Stress at Break - Across Flow (73°F (23°C))	653 psi	4.50 MPa	ISO 37
Elongation at Break - Across Flow (73°F (23°C))	450 %	450 %	ASTM D412
Tensile Strain at Break - Across Flow (73°F (23°C))	450 %	450 %	ISO 37

Thermal

	Typical Value (English)	Typical Value (SI)	Test Based On
RTI Elec	212 °F	100 °C	UL 746
RTI Str	194 °F	90.0 °C	UL 746



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Electrical	Typical Value (English)	Typical Value (SI)	Test Based On
Comparative Tracking Index (CTI)	PLC 0	PLC 0	UL 746
High Amp Arc Ignition (HAI)	PLC 0	PLC 0	UL 746
High Voltage Arc Resistance to Ignition (HVAR)	PLC 6	PLC 6	UL 746
High Voltage Arc Tracking Rate (HVTR)	PLC 3	PLC 3	UL 746
Hot-wire Ignition (HWI)	PLC 2	PLC 2	UL 746

Injection	Typical Value (English)	Typical Value (SI)
Drying Temperature	180 °F	82 °C
Drying Time	3.0 hr	3.0 hr
Suggested Max Moisture	0.080 %	0.080 %
Suggested Max Regrind	20 %	20 %
Rear Temperature	350 °F	177 °C
Middle Temperature	360 °F	182 °C
Front Temperature	360 °F	182 °C
Nozzle Temperature	370 to 430 °F	188 to 221 °C
Processing (Melt) Temp	380 to 450 °F	193 to 232 °C
Mold Temperature	50 to 125 °F	10 to 52 °C
Injection Rate	Fast	Fast
Back Pressure	50.0 to 100 psi	0.345 to 0.689 MPa
Screw Speed	100 to 200 rpm	100 to 200 rpm
Clamp Tonnage	3.0 to 5.0 tons/in ²	41 to 69 MPa
Cushion	0.125 to 0.250 in	3.18 to 6.35 mm
Screw L/D Ratio	16.0:1.0 to 20.0:1.0	16.0:1.0 to 20.0:1.0
Screw Compression Ratio	2.0:1.0 to 2.5:1.0	2.0:1.0 to 2.5:1.0
Vent Depth	1.0E-3 in	0.025 mm

Injection Notes

Santoprene™ TPV is incompatible with acetal and PVC. For more information regarding processing and mold design, please consult our Injection Molding Guide.

Extrusion	Typical Value (English)	Typical Value (SI)
Drying Temperature	180 °F	82 °C
Drying Time	3.0 hr	3.0 hr
Melt Temperature	385 °F	196 °C
Die Temperature	390 °F	199 °C
Back Pressure	725 to 2900 psi	5.00 to 20.0 MPa

Extrusion Notes

Santoprene™ TPV is incompatible with acetal and PVC. For more information regarding processing and die design, please consult our Extrusion Molding Guide.

Flammability	Typical Value (English)	Typical Value (SI)	Test Based On
Flame Rating			UL 94
0.04 in (1.0 mm)	HB	HB	
0.06 in (1.5 mm)	HB	HB	
0.12 in (3.0 mm)	HB	HB	

Additional Information

Where applicable, test results based on fan gated, injection molded plaques.

Tensile strength, elongation and tensile stress are measured across the flow direction - ISO type 1, ASTM die C.

All products purchased directly from an ExxonMobil affiliate in Europe are REACH compliant. For products not imported into Europe by ExxonMobil, customers should assess their legal responsibilities under REACH.



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Legal Statement

This product, including the product name, shall not be used or tested in any medical application without the prior written acknowledgement of ExxonMobil Chemical as to the intended use. For detailed Product Stewardship information, please contact Customer Service.

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Processing Statement

Desiccant drying for 3 hours at 80°C (180°F) is recommended. Santoprene™ TPV has a wide temperature processing window from 175 to 230°C (350 to 450°F) and is incompatible with acetal and PVC. For more information, please consult our Safety Data Sheet, Injection Molding Guide and Extrusion Guide.

Notes

Typical properties: these are not to be construed as specifications.

¹ Product may not be available in one or more countries in the identified Availability regions. Please contact your Sales Representative for complete Country Availability.

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